REMARKS

New claims 14 to 16 are presented and are directed to a method for reducing freeze/thaw voids in an uncured adhesive comprising steps that will deliver the adhesive with fewer freeze/thaw voids than would be present in the absence of those steps.

The Examiner previously rejected the claims as being unpatentable over the following references: VanDyke (US 5,326,603), Bergner (US 5,827,456), Batson (US 5,016,784), Hull (WO 91/01711 A1), and Okamoto (JP 08-057051 A). Applicant addresses those references in view of the new claims.

VAN DYKE (US 5,326,603)

Van Dyke is directed to an article that can be used as an applicator, including an applicator for an adhesive. It can be made of polypropylene and the walls can have a thickness within the range of 0.2032 mm to 0.635 mm. However, the article will have a flexural modulus of 150,000 (MPA) (column 4, line 44), which is significantly different than a flexural modulus of less than 1240 MPa as required by the instant claims. Moreover, the article in Van Dyke has a frangible portion for breaking and a soft applicator tip. Thus, Van Dyke does not anticipate the instant claims. Neither does Van Dyke teach or suggest that a syringe with roughened interior walls is effective for reducing freeze/thaw voids in an uncured adhesive that has been frozen and thawed.

BERGNER (US 5,827,456)

Bergner does not remedy the deficiencies of Van Dyke. Bergner is directed to a plastic bottle with texture on both the outer surface and inner surface of the corresponding parts of the plastic bottle (column 2, line 24), giving the wall parallel undulations (column 4, line 5). Bergner does teach that the walls of the bottle can be polyethylene with a thickness of 0.1 to 0.3mm and that the undulations are 0.05 to 0.15 mm. However, referring to Figure 1, it can be seen that the walls of the bottle are significantly different from the walls of the instantly claimed syringe. The walls remain a constant uniform thickness and the undulations are used to stabilize the thinness of the walls (bottom of column 3 to top of column 4). In the instant invention, only the interior wall of the container is roughened, and the thickness of the wall varies by the mean roughness value. Moreover, there is nothing in Bergner teaching or suggesting that a roughened interior will reduce freeze/thaw voids in a frozen and thawed uncured adhesive. Combining Bergner with

Van Dyke leads to an applicator with undulating walls. The combination does not teach or suggest a method for reducing freeze/thaw voids.

BATSON (US 5,016,784)

Batson is directed to a syringe with a hydrocarbon grease seal. The walls as depicted in the figures appear smooth. There is no disclosure as to the thickness of the walls or roughening of the interior. In combination with Van Dyke or Bergner, the instant invention is still not reached for the reasons mentioned above.

HULL (WO 91/01711 A1),

Hull discloses a medical dispensing system for making tissue adhesive components quickly available for surgical use and a process for preparing this system. This is accomplished by placing a solution or colloid containing the desired tissue adhesive components in a container, closing the container and freezing the solution or colloid in the container while the container is rapidly rotated around its axis to coat at least one interior surface of the container with a thin coating of frozen tissue adhesive component. This is a decidedly different method from the instant invention in which a solution or colloid of adhesive is *not* formed, the container is *not* rotated rapidly around its axis, and the walls are *not* coated with a thin film of tissue adhesive. Moreover, it is stated, page 5, line 5, that the Hull container can be made of some plastics, metal, or glass. Certainly, the grouping of metal and glass with plastics indicates that these are not flexible containers. Thus, Hull does not make obvious the instant invention as there is no teaching or suggestion in Hull to use a thin walled container, or a flexible container, for the method of reducing freeze/thaw voids in a frozen adhesive, as now presented by claim 14.

OKAMOTO (JP 08-057051 A)

The combination of the Okamoto patent with Hull does not alleviate this deficiency. Okamoto is directed to a syringe for holding liquid medicines, the syringe prepared from PETD, a random copolymer of ethylene and TCD. TCD is a tetracyclododecene. Example 1 notes that the syringe was prepared from an ethylene/dodecene copolymer known as Apel 6509, a product of Mitsui Petroluem Chemical Co. Information from the website for Mitsui indicates that the Apel syringes, including 6509 (T) have a flexural modulus greater than 2400 MPa. A print-out of that page was sent to the Examiner previously. Both the composition and the flexural modulus of the syringe used in the Okomoto patent are distinctly different from the composition and flexural modulus of the syringe in the instant claimed method.

Okamoto, moreover, is directed to a syringe with both a roughened gasket and a roughened interior, to reduce sliding friction. The roughening must be done in a certain way so that the roughened edges are obtuse angles to reduce sliding friction. A copy of a translation from a translation company is enclosed for the Examiner. There is nothing in Okamoto to suggest or teach a method for reducing freeze/thaw voids in frozen and thawed adhesives, particularly not in a syringe as thin walled or a flexible as claimed in the instant invention. The Examiner may allege that the reduction in freeze/thaw voids would be inherent; however, that cannot be the case in this instance because of the difference in flexural modulus.

Applicant respectfully urges the Examiner to the conclusion that the above references, alone or in combination, do not make obvious the current invention, and that the claims are in condition for allowance.

END OF REMARKS